8) median from A:

$M_{BC} = \left(\frac{5+7}{2}, \frac{5-2}{2}\right)$

$= \left(\frac{12}{2}, \frac{3}{2}\right)$

$= (6, 3/2)$

$(6, 3/2)$ & $(1,4)$

$m = \frac{4 - 3/2}{1 - 6}$

$= \frac{8/2 - 3/2}{-5}$

$= \frac{5/2}{-5}$

$= \frac{5}{2} \div \frac{-5}{1}$

$= \frac{5}{2} \times \frac{-1}{5}$

$= \frac{-1}{2}$

$y = mx + b$

$= -\frac{1}{2}x + b$

$4 = -\frac{1}{2}(1) + b$

$4 = -\frac{1}{2} + b$

$4 + \frac{1}{2} = b$

$\frac{8}{2} + \frac{1}{2} = b$

$\frac{9}{2} = b$

$y = -\frac{1}{2}x + \frac{9}{2}$

median from B

$M_{AC} = \left(\frac{1+7}{2}, \frac{4+(2)}{2}\right)$

$= \left(\frac{8}{2}, \frac{2}{2}\right)$

$= (4, 1)$

$(4, 1)$ & $(5, 5)$

$m = \frac{5-1}{5-4}$

$= \frac{4}{1}$

$= 4$

$y = mx + b$

$y = 4x + b$

$5 = 4(5) + b$

$5 = 20 + b$

$5 - 20 = b$

$-15 = b$

$y = 4x - 15$

Centroid

$y = 4x - 15$ ①

$y = -\frac{1}{2}x + \frac{9}{2}$ ②

①→②: $4x - 15 = -\frac{1}{2}x + \frac{9}{2}$

(×2): $8x - 30 = -x + 9$

$8x + x = 9 + 30$

$9x = 39$

$x = \frac{39}{9} = \frac{13}{3}$

sub $x = \frac{13}{3}$ into ①

$y = 4\left(\frac{13}{3}\right) - 15$

$y = \frac{52}{3} - \frac{45}{3}$

$y = \frac{7}{3}$

$\left(\frac{13}{3}, \frac{7}{3}\right)$